UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/821,330 | 04/09/2004 | Richard L. Miller | 58767US003 | 1003 |

32692 7590 10/16/2009

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

| EXAMINER | |
|---|---|
| PACKARD, BENJAMIN J | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1612 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 10/16/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/821,330 | MILLER ET AL. | |
| | Examiner | Art Unit | |
| | Benjamin Packard | 1612 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14,16 and 18-33* is/are pending in the application.

4a) Of the above claim(s) *3-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,16 and 18-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1pg (08/05/09)*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/05/09 has been entered.

Applicants' arguments, filed 08/05/09, have been fully considered. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

### *Claim Objections*

**Claim 1** is objected to because of the following informalities: The claims contain the abbreviation IRM. Abbreviations should be spelled out at least once in the claims. Appropriate correction is required.

**Claim 16** is objected to because of the following informalities: The claim states "wherein the localized tissue region includes a vaccine", but the localized region cannot include a vaccine, given the tissue is distinct from the vaccine. It appear Applicants meant "where the depositing within a localized tissue region" includes a vaccine, thereby co-administrating the vaccine with the IRM compound. Abbreviations should be spelled out at least once in the claims. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

**Claims 1, 2, 16, and 18-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al (US Pregrant Pub 2003/0139364, see IDS dated 11/24/2004), in view of Brown et al (US 5,573,781) and Granger (WO 1996-029394).

Krieg et al discloses administration of cancer vaccines (paragraph 304) and imidazoquinoline agents (paragraph 308) which include resiquimod (paragraph 346) to treat breast cancer (paragraph 198). Administration is taught to include multiple forms, including lipid based delivery systems (paragraph 364), injection (paragraph 385), polymer systems (paragraph 395). Systems are suggested as extended release (paragraph 369).

Krieg et al does not disclose resuquimod for the treatment of breast cancer as a preferred embodiment or depositing within the cancer tissue.

Brown teaches a method of treating a host with a cellular proliferative disease by administering the agent at the site of a lesion of the cellular proliferative disease (claim 22) where the listed of solid malignant tumors include breast tumors (col 8 lines 26-37). Brown further teaches injecting anti-cancer agents intra-tumorly to maximize tumor cell exposure while minimizing exposure of surrounding normal tissue (col 7 spanning 65-col 8 line 1). Delivery within the region is taught through known methods, such as syringe needle (col 7 lines 42-44).

Brown does not teach administration of resuquimod or the co-administration of a vaccine.

Granger teaches administering mixed lymphocytes within a tumor site to increase immunogenic reaction and thereby reducing tumor size (pg 22 B. Intralesional implant of mixed lymphocyte cell culture). The mixed lymphocytes may reasonably be interpreted as a vaccine, given the cells are taken from a patient, modified, and then re-injected into the tumor (pg 21 Example I, section 4, alloactivation of patient mononuclear cells with donor leukocytes). Granger also teaches the toxic effect of systemic delivery of cancer therapies and suggests intra-tumor administration to minimize the risk (col 2 lines 1-11).

Granger odes not teach co-administration of resuquimod.

It would be obvious to one of ordinary skill in the art, when practicing the method lf Krieg et al, to administer the composition within the tumor to maximize the exposure the tumor. Further, while Krieg et al teaches administration of vaccines generally, it would be obvious to use the vaccine product of Granger, given the teaching it reduces tumor size by also inducing an immune response. Finally, where the administration made obvious by the prior art is directly to the tumor, the skilled artisan would use any known variation of administration, similar to needle injection.

Applicants asserted in response to the previous Office Action that the skilled artisan would not be motivated to administer the composition within the tumor based on the teaching of Krieg. Also, Applicants assert the vaccination strategy of Krieg et al does not disclose or suggests the activation of antigen presenting cells in the vicinity of cancer cells because the teaching of Jain suggests the tumor microenvironment was hostile to immune responses. Finally, Applicants assert Krieg et al teaches systemic, not local, administration of the imidazoquioline.

First, in response to the general motivation to administer active agents within the tumor, Examiner has now cited Brown which provides motivation to administer cancer treatments within the tumor, thereby increase exposure to the tumor.

Second, Applicants appear to focus on a single grouping of cancer vaccines taught by Krieg. The disclosure of Krieg is not limited to such examples, but teaches generally that vaccines may be used to activate the cell-mediated immune system. Administering such vaccines would reasonably have the same effect as the local administration of the active agents disclosed in Brown, which would localize the increased alpha-TNF and other immune response. While Applicants cite Jain generically for the teaching that the tumor microenvironment was thought to be hostile to immune responses, Examiner notes Jain is directed to the delivery of molecular and cellular medicines to solid tumor, where the major barriers include making their way into the blood vessels of the tumor and across the vessel wall into the interstitium. Here, the agents are not required to be absorbed into the tumor, but instead reside within the tumor tissue and when exposed to the surrounding tissue, will illicit a desired immune response.

Finally, with regards to the systemic administration of imidazoquioline, while Krieg does teach one method of administering the imidazoquinoline systemically, Krieg also discusses that the immune response may be local or systemic (paragraph 18). Where administration of the vaccine is localized, there would be no need for systemic administration of the imidazoquinoline where only the localized region would be

exposed to the vaccine. Additionally, as discussed in Brown, by administering both agents locally, potential side effects are reduced.

***Conclusion***

No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Packard whose telephone number is 571-270-3440. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frederick Krass can be reached on 571-272-0580. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benjamin Packard/
Examiner, Art Unit 1612

/Frederick Krass/
Supervisory Patent Examiner, Art Unit 1612